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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/544,197	08/02/2005	Marcel Breeuwer	NL 030134	8270

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EXAMINER	
ABDI, AMARA	
ART UNIT	**PAPER NUMBER**
2609	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/30/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/544,197	BREEUWER ET AL.	
	Examiner	Art Unit	
	Amara Abdi	2609	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 August 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *02 August 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Acknowledge of the preliminary amendment submitted on August 02, 2005.

Specification

2. This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.

3. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

(a) TITLE OF THE INVENTION.

(b) CROSS-REFERENCE TO RELATED APPLICATIONS.

(c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.

(d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.

(e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.

(f) BACKGROUND OF THE INVENTION.

(1) Field of the Invention.

(2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.

(g) BRIEF SUMMARY OF THE INVENTION.

(h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).

(i) DETAILED DESCRIPTION OF THE INVENTION.

(j) CLAIM OR CLAIMS (commencing on a separate sheet).

(k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).

(l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

The examiner suggests inserting section headers in the appropriate location in the specification.

Claim Objections

4. Claims 1-10 are objected to because of the following informalities:

(1) Claims 2,3,4,5,6,7,8, lin1, "**a** medical image analysis" should be changed to "**the** medical image analysis";

(2) Claim 8, line 17, "**an** output" should be should be changed to "**the** output".

Appropriate correction is required.

(3) In claims 1,9-10, there are no transitional phrases, for example, "comprising", "consisting essentially of" and "consisting of" in the claims. The transition phrases "comprising", "consisting essentially of" and "consisting of" define the scope of the claim with respect to what unrecited additional components or steps, if any, are excluded from the scope of the claims. Furthermore, the claim is objected to because the elements of the process claim are not recited as steps. The elements of a process claim are steps that should usually be verbal phrases introduced by a gerund or verbal noun (the "-ing" form verb). For example, the medical image processing, comprising the steps of quantifying, performing error analysis, and outputting the results.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 1-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

(1) Claim 1, line 3-4; claim 9, line 24; and claim 10, line 31, recite the limitation

"the result of an error analysis". There is insufficient antecedent basis for the limitation in the claim. The "result of an error analysis" was not introduced before.

(2) Claim 2, line 10; and claim 3, line 19, recite limitation "the influence". There is insufficient antecedent basis for the limitation in the claim. The "influence" is not introduced before.

(3) Claim 2, line 13; claim 3, line 22; claim 4, line 26; and claim 5, line 2, recite limitation "the quantitative analysis". There is insufficient antecedent basis for the limitation in the claim. The "quantitative analysis" was not introduced before.
It is unclear if this limitation of the claims is intended to refer to "quantitative **evaluation**" on line 2 of claim 1. However, the "quantitative analysis" differs from the "quantitative **evaluation**". The examiner suggests changing "the quantitative analysis" to "the quantitative evaluation" or "the quantitative evaluation" to "the quantitative analysis".

Claim Rejections - 35 USC § 101

7. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

8. Claims 9 and 10 are rejected under U.S.C. 101 because the claimed invention is directed to non- statutory subject matter.

In claim 9, a "**computer program**" is being recited; however, computer program would reasonably be interpreted by one of ordinary skill in the art as software, pre se.

In claim 10, a "**workstation**" is being recited; the examiner interpreted the workstation as software, per se.

This subject matter is not limited to that which falls within a statutory category of invention because it is limited to a process, machine, manufacture, or a composition of matter. Software is a function descriptive material and function descriptive material is non-statutory subject matter.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1, and 9-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Sekiya et al. (US 5,648,652)

(1) Regarding claims 1,9 and 10:

Sekiya et al. disclose a medical image analysis process, computer program, and workstation (column 18, line 67, and column 19, line 1), which utilize information contained in at least one medical image (column 3, line 8), in which a quantitative evaluation is derived from the medical image analysis process (column 6, line 10-27), (the examiner interpreted that the quantitative evaluation is derived from the electrical data, which is derived from the medical image analysis) and delivered as an output (column 21, line 2-5), characterized in that the result of an error analysis (column 20, line 50-54), performed in order to provide information relating to the accuracy of the

quantitative evaluation (column 2, line 30-31), is also delivered as further output (column 21, line 2-5).

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

12. Claims 2-3 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sekiya et al. in view of Lauenstein et al. (USPGPUB 2004/0241093).

(1) Regarding claim 2:

Sekiya et al. disclose all the subject matter as described in claim 1 above.

However, Sekiya et al. dose not disclose the identification of an image artefact, and calculation of the influence of the image artifact on the accuracy of the quantitative evaluation as recited in claim 2.

Lauenstein et al. teaches a formulations for use in medical and diagnostic procedures, where the image artifact is identified (paragraph [0095], line 2), and calculate the influence of the image artifact on the accuracy of the quantitative analysis (paragraph [0097], line 2-10), (the examiner interpreted the calculation of the influence of the image artifact by comparing different solutions introduced to the image artefact) (see table 2).

One of ordinary skill in the art would have clearly recognized the identification of the image artefact (paragraph [0095], line 1-12), and the calculation of the influence on the accuracy of the quantitative analysis (paragraph [0085], line 5-10; and paragraph [0097], line 1-10). Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to combine the system of Lauenstein et al., where the image artefact is introduced, in the system of Sekiya et al., because such feature may be used to diagnose diseases including, inflammatory Bowel Disease, Crohn's Disease, ulcerative colitis, Irritable Bowel Syndrome, Cancer of the small bowel, anal cancer, colon cancer, liver cancer, pancreatic cancer (paragraph [0019], line 2-7), as well as performing gastrointestinal viewing of imaging procedures, such as endoscopies, X-ray imaging, virtual imaging, which includes the usage of computer software to view the inside of the gastrointestinal tract (paragraph [0020], line 2-6).

(2) Regarding claim 3:

Sekiya et al. disclose all the subject matter as described in claim 1 above. Also, Sekiya et al. disclose an identification of an image-processing step, which contributes to the image analysis process.

However, Sekiya et al. does not disclose the calculation of the influence of the image artifact on the accuracy of the quantitative evaluation as recited in claim 3.

Lauenstein et al. teaches a formulations for use in medical and diagnostic procedures, where the calculation the influence of the image artifact on the accuracy of the quantitative analysis (paragraph [0097], line 2-10), (the examiner interpreted the

calculation of the influence of the image artifact by comparing different solutions introduced to the image artefact) (see table 2).

One of ordinary skill in the art would have clearly recognized the calculation of the influence on the accuracy of the quantitative analysis (paragraph [0085], line 5-10; and paragraph [0097], line 1-10). Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to combine the system of Lauenstein et al., where the influence of the image processing step on the accuracy of the quantitative evaluation is calculated, in the system of Sekiya et al., because such feature may be used to diagnose diseases including, inflammatory Bowel Disease, Crohn's Disease, ulcerative colitis, Irritable Bowel Syndrome, Cancer of the small bowel, anal cancer, colon cancer, liver cancer, pancreatic cancer (paragraph [0019], line 2-7), as well as performing gastrointestinal viewing of imaging procedures, such as endoscopies, X-ray imaging, virtual imaging, which includes the usage of computer software to view the inside of the gastrointestinal tract (paragraph [0020], line 2-6).

(3) Regarding claim 6:

Sekiya et al. disclose all the subject matter as described in claims 1 and 2 above.

Also, Sekiya et al. disclose the identification of noise, which contributes to the image analysis process (column 2, line 19; and column 14, line 5-6)

However, Sekiya et al. dose not disclose the identification of an image artefact as recited in claim 6.

Lauenstein et al. teaches a formulations for use in medical and diagnostic procedures, where the image artifact is identified (paragraph [0095], line 2).

One of ordinary skill in the art would have clearly recognized the identification of the image artefact (paragraph [0095], line 1-12). Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to combine the system of Lauenstein et al., where the image artefact is introduced, in the system of Sekiya et al., because such feature may be used to diagnose diseases including, inflammatory Bowel Disease, Crohn's Disease, ulcerative colitis, Irritable Bowel Syndrome, Cancer of the small bowel, anal cancer, colon cancer, liver cancer, pancreatic cancer (paragraph [0019], line 2-7), as well as performing gastrointestinal viewing of imaging procedures, such as endoscopies, X-ray imaging, virtual imaging, which includes the usage of computer software to view the inside of the gastrointestinal tract (paragraph [0020], line 2-6).

13. Claims 4-5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sekiya et al. and Lauenstein et al., as applied in claim 2 and 3 above, and further in view of Kouri et al. (US 6,847,737).

(1) Regarding claim 4:

Sekiya et al. disclose all the subject matter as described in claim 2 above.

However, Sekiya et al. does not disclose the storage of the result of the calculation prior to incorporation into the delivered output as recited in claim 4.

Kouri et al. teaches a method for performing DAF data filtering and padding, where the results of calculation are stored (column 1, line 54) prior to incorporation into the delivered output (column 1, line 54).

One of ordinary skill in the art would have clearly recognized the storage of the result in a memory readable by a digital processing unit (column 1, line 53-61). Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to combine the system of Kouri et al., where the results are stored, in the system of Sekiya et al., because such feature provides a signal processing, where the accuracy and precision of the final signal and image closely approaches the uncertainty maximum accuracy and precision (column 1, line 66-67; and column 2, line 1-2). As well as it provides the improving X-ray and magnetic imaging techniques, especially mammogram images using the DAF (distributed approximating functional) and DAF in an associated digital processing unit (column 2, line 8-10).

(2) Regarding claim 5:

Sekiya et al. disclose all the subject matter as described in claims 1,2, 4 above.

However, Sekiya et al. does not disclose that the result of the calculation of the influence on the accuracy of the quantitative analysis is stored in at least one of a multidimensional table, or look up table, or formula as recited in claim5.

Kouri et al. teaches a method for performing DAF data filtering and padding, where the results of calculation are stored in table (column 37, line 45-46). (See table 2).

One of ordinary skill in the art would have clearly recognized the storage of the result in the table (column 37, line 50-60). Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to combine the system of Kouri et al., where the results are stored, in the system of Sekiya et al., because such feature

provides a signal processing, where the accuracy and precision of the final signal and image closely approaches the uncertainty maximum accuracy and precision (column 1, line 66-67; and column 2, line 1-2). As well as it provides the improving X-ray and magnetic imaging techniques, especially mammogram images using the DAF (distributed approximating functional) and DAF in an associated digital processing unit (column 2, line 8-10).

(3) Regarding claim 7:

Sekiya et al. disclose all the subject matter as described in claims 1 and 3 above.

However, Sekiya et al. does not disclose that the identified image processing step which contributes to the image analysis process is at least one of noise, partial volume effect, sampling rate, inhomogeneity within the medical imaging process or an artefact due to the patient motion as recited in claim 7.

Kouri et al. teaches a method for performing DAF data filtering and padding, where the identified image-processing step is a classification (column 144, line 54-55).

One of ordinary skill in the art would have clearly recognized that identified image-processing step which contributes to the image process is a classification (column 144, line 53-59). Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to combine the system of Kouri et al., where the results are stored, in the system of Sekiya et al., because such feature provides a signal processing, where the accuracy and precision of the final signal and image closely approaches the uncertainty maximum accuracy and precision (column 1, line 66-67; and column 2, line 1-2). As well as it provides the improving X-ray and magnetic

imaging techniques, especially mammogram images using the DAF (distributed approximating functional) and DAF in an associated digital processing unit (column 2, line 8-10).

14. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sekiya et al. in view of Ryals et al. (US 5,803,914).

Sekiya et al. disclose all the subject matter as described in claim 1 above.

However, Sekiya et al doses not disclose the medical image analysis, where the information contained in a medical image is the assessment of cardiac perfusion; and where the quantitative evaluation is the myocardial perfusion reserve index as recited in claim 8.

Ryals et al. teaches a method and apparatus for displaying data in a medical imaging system, where the medical image analysis is the assessment of cardiac perfusion data (column 43, line 30-31); and where the quantitative evaluation is the myocardial perfusion (column 6, line 6)

One of ordinary skill in the art would have clearly recognized the medical image system, using the assessment of cardiac perfusion data (column 43, line 23-33); and dividing the region of interest during the quantitative evaluation, which corresponds to the same portion of the myocardial structure (column 6, line 5-8). Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to combine the system of Ryals et al., where using the cardiac perfusion data in the medical image processing, in the system of Sekiya et al., because such feature allows efficient

detection of an infarct area as well as ischemic area within the cardiac tissue under review, which can provide a physician the ideal mean for analyzing the acquired image data in the diagnosis of coronary artery disease (CAD) by creating functional images representing quantitatively computed values for both perfusion and function 9column 5, line 24-32).

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Bisgaier et al. (US PGPUB 2002/0103252) disclose pharmaceutical composition comprising CARBOXYALKYLETHER that lowers triglycerides, which being useful for treating vascular diseases.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amara Abdi whose telephone number is (571) 270-1670. The examiner can normally be reached on Monday through Friday 7:30 Am to 5:00 PM E.T..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shuwang Liu can be reached on (571) 272-3036. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Amara Abdi
03/26/2007

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SUPERVISORY PATENT EXAMINER